

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

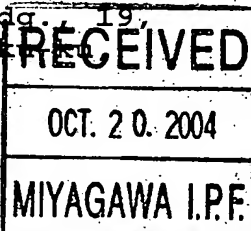
# PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:  
**MIYAGAWA TEIJI**

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Date of mailing  
(day/month/year) **19.10.2004**

Applicant's or agent's file reference

**04-805EB-PCT**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2004/009577**

International filing date (day/month/year)

**30.06.2004**

Priority date (day/month/year)

**04.07.2003**

International Patent Classification (IPC) or both national classification and IPC

Int.Cl. **H01L21/205, H01L21/31**

Applicant

**EBARA CORPORATION**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

**Japan Patent Office**

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**4R 8831**

Form PCT/ISA/237 (cover sheet) (January 2004)

ATTACHMENT F

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/009577

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Box No. I      Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>3</u>	YES
	Claims	<u>1, 2</u>	NO
Inventive step (IS)	Claims		YES
	Claims	<u>1 - 3</u>	NO
Industrial applicability (IA)	Claims	<u>1 - 3</u>	YES
	Claims		NO

2. Citations and explanations

D1:JP 07-053298 A (Fujitsu Limited.) 1995.02.28, fig.2  
& US 6248400 B1

D2:JP 04-037693 A (Idemitsu Petrochemical Co. Ltd.) 1992.02.07, fig.1,3  
(no family)

D3:JP 09-055385 A (Daido Hokusuan Co. Ltd.) 1997.02.25, fig.1  
(no family)

The subject matter of claim 1 does not appear to be novel with respect to D1. Claim 1 relates to a substrate processing system comprising : a gas supply source, a reactor, a first circulation pipe, a second circulation pipe and a flow regulating valve. Such a substrate processing system appears to be known from D1 (see fig. 2, paragraph [0019]-[0023]).

The subject matter of claim 2 does not appear to be novel with respect to D1. Claim 2 relates to a substrate processing system of Claim1 further comprising a pump. Such a pump appears to be known from D1 (see fig. 2, vacuum pump 19).

The subject matter of claim 3 does not appear to involve an inventive step in view of the document D1, D2, D3 cited in the ISR.

Claim 3 relates to a substrate processing system of Claim 1 or 2 that further comprises a second gas supply source. The substrate processing system disclosed in D1 appears to be different from the subject matter of claim 3 in that all the gases are supplied to a tank 22.

However, a substrate processing system comprising a second gas supply source for supplying a second process gas not to a tank but to a reactor in order to get a mixed gas with a intended gas composition is disclosed in both D2 and D3.

D2 discloses a substrate processing system comprising gas supplying tubes 13,14,15, which supply Ar, CO, H2 gas respectively not to a buffer tank 9 but to a reactor 1 via flow controller 11 (see fig. 1 and fig. 3).

D3 discloses a substrate processing system comprising a H2 gas supplying equipment 35, which supplies H2 gas not to a tank 32 but to a reactor 20 (see fig. 1).

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: ☒

Therefore the skilled person would regard it as a normal option to adopt a second gas supply source supplying the second gas to a reactor as disclosed in D2 or D3 instead of a second gas supply source supplying the second gas to a tank as disclosed in D1 in order to make a mixed gas in the tank or the reactor a intended gas composition.

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